AN EMPIRICAL INVESTIGATION OF GAZING BEHAVIORS IN HIGH AND LOW APPREHENSIVE INDIVIDUALS AS RELATED TO MOOD AND PERSONALITY CHARACTERISTICS

By

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To Carolyn

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This study investigated the gazing behaviors, moods, and personality characteristics of individuals who, on the basis of a self report scale given prior to the experiment, were characterized by high or low levels of communication apprehension. Specifically, this inquiry utilized an unobtrusive video camera to tape sixty high and low communication apprehensive subjects while they waited with another subject for a five minute period.

Subjects were paired according to apprehension level, resulting in three different dyadic compositions consisting of 10 "high-high" pairs, 10 "high-low" pairs, and 10 "low-low" pairs. They also were placed in either "threat" or "no threat" conditions, with subjects in the "threat" condition given the expectation that they would be

requested to deliver a speech before a camera, and subjects in the "no threat" condition given no expectations about a forthcoming speech. After waiting with their partners for a five minute period (while they were unobtrusively taped), subjects completed two self report scales designed to assess mood and personality characteristics. After completion of the scales, subjects were debriefed and dismissed.

The three independent variables (apprehension level, threat condition, and pair composition) and six dependent variables (fear of camera, mood, personality, gaze, mutual gaze, and magazine examination) were tested by a multivariate analysis. The results yielded no significant interactions but produced the following main effects:

1. Highly apprehensive subjects gazed less than low apprehensive subjects ($p < .001$).
2. Highly apprehensive subjects engaged in less mutual gaze than low apprehensive subjects ($p < .009$).
3. Highly apprehensive subjects were more anxious than low apprehensive subjects about speaking before a camera ($p < .0001$).
4. Highly apprehensive subjects' moods were characterized by more tension ($p < .006$), depression ($p < .047$), fatigue ($p < .05$), confusion ($p < .02$) and less vigor ($p < .0001$) than low apprehensive subjects.
5. Highly apprehensive subjects' personalities were characterized by less emotional stability ($p < .006$) and self assurance ($p < .0009$); and by more submissiveness ($p < .05$), restraint ($p < .034$), and tension ($p < .001$) than low apprehensive subjects.

CHAPTER I

OVERVIEW OF THE PROBLEM AREA

Contemporary Approaches to the Study of Apprehension

Communication apprehension has been the subject of scholarly research for the past four decades (McCroskey, 1977, p. 78) and the period from 1970-1980 has generated over 200 reported studies of apprehension-related phenomena (McCroskey, 1982, p. 136). Interest in this area has grown from pioneering efforts in the field of speech in the United States to multidisciplinary investigations spanning differing cultures and nations. The rapid increase in research on communication apprehension has prompted one noted authority on this subject to suggest that "this area of interest has generated more research over the past decade than almost any other in the communication field" (McCroskey, 1982, p. 136).

While professionals in the field of communication have become increasingly concerned with problems associated with communication apprehension, contemporary approaches to identifying and aiding apprehensives are characterized by differing theoretical and definitional perspectives. These different views of apprehension have generated a variety of labels for this problem including "reticence" (Phillips, 1965, pp. 22-38), "communication apprehension" (McCroskey, 1970, pp. 269-277), "shyness" (Zimbardo, Pilkonis &

Norwood, 1975, pp. 68-72), and "unwillingness to communicate" (Burgoon, 1976, pp. 60-69). These differing terms are accompanied by divergent perspectives, research methods, and approaches to treatment. A review of each approach offers insight into the nature of our contemporary understanding of this complex phenomenon.

Reticence

Originally introduced by Phillips, reticence was initially conceived as a condition in which an individual felt the potential loss from speaking far outweighed any potential gain (Phillips, 1968, pp. 39-49; Kelly, Phillips & McKinney, 1982, p. 211). Since its inception, however, this concept has broadened and become more behaviorally oriented (McCroskey, 1982, p. 140). This theory presently posits that reticent communicators are individuals who fail to communicate adequately in various formal and informal settings. Because of the wide range of causes and types of dysfunctional communication which are included in this construct, reticence is considered the most global of the apprehension-related theories (McCroskey, 1982, p. 140).

Unwillingness to Communicate

The unwillingness to communicate construct was initiated by Burgoon in 1976. This theoretical orientation is similar to reticence in that it focuses on persons whose perceived losses in a communication setting outweigh their perceived gains, but proponents of this theory typically specify cognitive reasons for apprehensives' avoidance behaviors. Specific contributors to avoidance are personality variables such as apprehension, alienation, low self-esteem and introversion. While reticence is concerned with persons who communicate ineffectively, advocates of the unwillingness-to-communicate position are concerned with the reasons underlying why these individuals are unwilling to engage in communication (Burgoon, 1976, pp. 60-69).

Predispositions Toward Verbal Behavior

The construct of "predispositions toward verbal behavior" was introduced by Mortensen, Arntson and Lustig in 1977. This theoretical orientation stresses an individual's willingness to communicate with others. Members of this school of thought are behaviorally oriented and emphasize amount (as opposed to quality) of communication. Consequently, "predispositions toward verbal behavior" theorists share some commonalities with both the "reticence" and "unwillingness to communicate" schools of thought. Nevertheless, this orientation remains unique because of its concentration on quantity of communication (Mortensen, Arntson & Lustig, 1977, pp. 146-158).

Shyness

The "shyness" construct is one of the broadest of the apprehension-related theories. Unfortunately, it is also the most ill-defined of the theories (McCroskey, 1982, p. 142). In fact, Zimbardo, the founder of the "shyness" school of thought, has described it as difficult to define (Zimbardo, 1977). The shyness construct appears to overlap each of the previously discussed theories, positing such behaviors as communication avoidance, negative predisposition toward verbal behavior, unwillingness to communicate and ineffective communication. Some "shyness" theorists emphasize observable behaviors such as reluctance to talk, failure to make eye contact, etc. (Pilkonis, Heape & Kline, 1980, pp. 250-255), while others stress social anxiety and the "relative absence of expected social behaviors" (Buss, 1980, p. 184). These differing perspectives have led critics to suggest that the "shyness" construct is situationally and individually defined by different researchers, resulting in a lack of specific definition of this concept (McCroskey, 1982, p. 143).

Communication Apprehension

Initially advanced by McCroskey in 1970, the concept of "communication apprehension" is mainly concerned with persons whose communication effectiveness is hampered by internal tension and anxiety (Kelly, Phillips & McKinney, 1982, p. 210). Proponents of this theory suggest that communication apprehension is a relatively limited construct which does not attempt to embrace all forms of ineffective communication. McCroskey, for example, defines communication apprehension as a subconstruct of reticence or unwillingness to communicate, and specifies that some forms of dysfunctional communication fall outside the scope of communication apprehension theory (McCroskey, 1977, p. 79). In spite of its emphasis on "internal tension" as the cause of apprehension, communication apprehension theory has expanded considerably during the past decade. Its focus on oral communication has broadened to include activities such as singing and even writing (McCroskey, 1982, p. 137).

Communication apprehension theorists originally defined CA as a trait-like, personality-type variable. More recently, though, this construct has been expanded to encompass both trait and state (situational) perspectives (McCroskey, 1982, pp. 146-150).

Communication Avoidance: A Global Construct

As is evident from the foregoing review, numerous theoretical approaches confront apprehension-related phenomena. In many cases, these constructs differ from one another, but all share the common notion that afflicted persons attempt to avoid communication. In fact, a recent synthesis of differing theoretical approaches suggests that

> Overall, then, findings of this study illustrate that communication apprehension and the approach-avoidance dimension of unwillingness to communicate are similar constructs. Both studies suggest that perceived lack of rewards from interaction represents a distinct problem, despite the fact that it is considered to be a component of reticence, shyness, and communication apprehension.

> Two conclusions may be drawn from this analysis. First, although a variety of labels are used by theorists, it seems reasonably clear that those labels do not denote four discrete problems. The similarities among the constructs far outweigh the differences. In all four cases, the predicted behavior pattern is avoidance of communication situations. The chief difference among them is the reason for that avoidance, although there is overlap among the constructs regarding those reasons. (Italics added). Individuals may avoid interaction because they feel anxious about it; they may have communication skill deficiencies or perceive that they do; they may expect communication to offer few rewards; they may be introverted, have low self-esteem, or feel alienated. Or several factors may be operating simultaneously (Kelly, 1982, p. 104)

Rosenfeld and Plax also offer support for the universality of communication avoidance, suggesting that reticent individuals consistently avoid social interaction (1976, p. 31), while Zimbardo argues that "reticence is the term that best describes a shy person's reluctance to relate to others. Reticence is an unwillingness to speak unless prodded, a disposition to remain silent, an inclination not to speak freely" (1977, p. 26). In summary, then, while differing schools of thought may offer alternative reasons as to why some individuals avoid communication, they all agree that communication avoidance is characteristic of apprehensive persons.

Communication avoidance may be considered a global construct since it is embraced by all major theories of apprehension-related phenomena. Still, as is discussed in the Statement of the Problem section of this study, many of the specific behavioral implications of such avoidance remain unclear.

The Effects of Communication Apprehension

The Qualitative Impact of Apprehension

Although investigators differ as to the most appropriate label for the apprehension phenomenon, there is little disagreement about the seriousness of the plight of the apprehensive individual. From a qualitative perspective, the sheer number of people affected by apprehension is considerable. Zimbardo, for example, reports that

> The most basic finding of our research establishes that shyness is common, widespread and universal. More than 80 percent of those questioned reported that they were shy at some point in their lives, either now, in the past, or always. Of these, over 40 percent considered themselves presently shy--that means four out of every ten people you meet, or 80 million Americans!
>
> For some people, shyness has long been a regular intruder in their everyday lives. About a quarter reported themselves chronically shy, now and always. Of these, a lonely four percent true-blue shys told us that their self definition of shyness was based on the fact that they were shy all of the time, in all situations, and with virtually all people. (Zimbardo, 1977, pp. 13-14)

Daly also noted that apprehension is a persuasive phenomenon, affecting from five to thirty percent of the U.S. population (Daly, 1977, p. 10), and the Bruskin Associates (a national survey research organization) characterized fear of public speaking as America's number one phobia (Bruskin Associates, 1973, Report # 53). Finally, Shaw (cited in J. A. Daly, 1977) and Davey (1975) both found that about one fourth of American elementary school students suffer from apprehension.

The Qualitative Impact of Apprehension

Although it is possible to quantitatively assess the number of persons who suffer from communication apprehension, figures alone fail to reveal the depth of this problem. McCroskey, Daly, Richmond and Cox, for example, found that highly apprehensive individuals are perceived as less socially attractive (McCroskey, Daly, Richmond & Cox, 1975, 51-65), and Daly and Leth found that high apprehensives are offered jobs less often and receive lower starting salaries than their less apprehensive counterparts (Daly & Leth, 1976). In addition, highly apprehensive individuals are characterized by low self-esteem (McCroskey, Daly, Richmond & Falcione, 1977, pp. 269-277), isolation from others (Low & Sheets, 1951, pp. 266-271), and a failure to extend trust to other persons (Low & Sheets, 1951, pp. 266-271; Griffin & Heider, 1967).

In the classroom, apprehensive students engage in low levels of participation in discussions (Lustig, 1939), avoid leadership positions (Daly, 1977, p. 14), and lack voluntary participation in question/answer sessions (Daly, 1977, p. 14). Such self-imposed isolation often tends to generate negative reactions from teachers, resulting in low probabilities of academic success regardless of effort, intelligence or ability (Bashore, 1971). In fact, Zimbardo suggests that shyness can be considered a mental handicap as severe as the most crippling physical handicaps and argues that reticence discourages new friendships, retards assertiveness, reduces positive personal evaluations, encourages self-consciousness, interferes with effective thinking, and is often accompanied by feelings of depression, anxiety and loneliness (Zimbardo, 1977, p. 12).

Apprehensive individuals often appear to be characterized by consistent patterns of avoidance behavior. Specifically, their implicit behaviors seem to be designed to avoid communication with others. These persons prefer housing locations which minimize contact with others (McCroskey, 1976, p. 43). They also avoid "power" seating locations in small groups (McCroskey, 1976, p. 42) and dislike competitive games (Daly, 1977, p. 12). Apprehensive persons tend to speak softly (English, 1964, pp. 14-18) and generally appear anxious and insecure. They choose seats which are comparatively distant from others and are perceived to be less extroverted and less composed than their non-apprehensive peers (Daly, 1977, p. 12). In the classroom, apprehensive persons choose seats in the back of the room (Daly, 1977, p. 12), have low verbal output and speak with more silent pauses (Lustig, 1974), contribute little in group discussions (Crowell, Katcher & Miyamoto, 1955), and tend to use indirect language (Conville, 1974). Socially, high apprehensives are comparatively less competent than non-apprehensive individuals (Low & Sheets, 1951). They are likely to be unpopular with their peers and have fewer friends of the opposite sex (Purvis, 1952) and are generally submissive in their interpersonal interactions (Phillips, 1968). Most of all apprehensive persons are reported to avoid eye contact. Zimbardo, for example, reports that a majority of shy persons find eye contact difficult or impossible (Zimbardo, 1977, p. 24, Pilkonis, 1977). McCroskey (1976) asserted that the avoidance of eye contact by apprehensives is motivated by their desire to avoid communication. Specifically, he offered (but did not test) the following hypothesis:

> The establishment of eye contact generally increases the probability of communication attempts and the continuation of interaction between people. *Since high communication apprehensives wish to avoid communication, we may hypothesize that they engage in less direct eye contact and less prolonged eye contact than people with less communication apprehension*. (p. 43) (Italics added).

In summary, specific avoidance behaviors are typically associated with apprehension. These nonverbal cues tend to communicate discomfort, submissiveness and a lack of desire to interact with others. One frequently reported characteristic is the avoidance of eye contact.

Personality Correlates of Apprehension

In addition to investigations of behavioral indicators of shyness, researchers have also attempted to determine personality correlates of apprehension. McCroskey and Richmond (1982) reported that shy persons are highly anxious, possess a low tolerance for ambiguity, and perceive themselves as less in control of their emotions. They also found them to be low in adventurousness, emotional immaturity, self-esteem and hesitant to accept changes in their environments. These persons were also characterized by a low tolerance for disagreement (pp. 21-24).

The most extensive investigation of personality correlates of apprehension was conducted by McCroskey, Daly and Sorenson (1976, pp. 377-378). Utilizing the 16 PF personality inventory (Cattell, Eber, & Tatsuoka, 1970), these researchers attempted to correlate 16 PF personality dimensions with apprehension levels. The results of a Pearson product moment correlation revealed positive correlations between high apprehension and anxiety, dogmatism, and external control; and negative correlations with cyclothymia, emotional maturity, dominance, surgency, character, adventurousness, confidence, self-control, tolerance for ambiguity, and need to achieve. McCroskey, Daly and Sorenson concluded that their findings generally portrayed a "negative picture" of high CA subjects and a "positive picture" of persons who were low in apprehension (p. 378). They concluded that "It is clear that communication apprehension is a severely debilitating, personality-type characteristic" (p. 380).

Situational Contributors to Apprehension

Other investigators have attempted to assess the influences of other persons on apprehensives' anxiety levels. The results of these investigations indicate that apprehensive individuals often feel discomfort in specific settings. Zimbardo, in research conducted on shy subjects, found that the persons he interviewed tended to be uncomfortable around their parents (8%), children

(10%), friends (11%), elderly persons (12%), relatives (21%), authorities by virtue of their role (40%), authorities by virtue of their knowledge (55%), the opposite sex (64%), and, most of all, strangers (70%) (p. 37). Specific discomforting situations included one-to-same sex interactions (14%), small task-oriented groups (28%), vulnerability (such as needing help) (48%), one-to-one different sex interactions (48%), being evaluated (53%), social situations (55%), perceived lower status (56%), large groups (68%), and being the focus of attention of a large group (such as giving a speech) (73%) (Zimbardo, 1977, p. 37). In addition to Zimbardo's findings, other research also conducted on shy subjects has discovered that ambiguous situations contribute to feelings of shyness and that meeting strangers is very discomforting (Pilkonis, 1977, p. 597). A major consequence of these situational influences is that shy persons often attempt to avoid initiating conversations with strangers. Pilkonis, for instance, reports that "one of the major differences between shy and not-shy people is the ability of the latter to initiate and structure conversations" (Pilkonis, 1977, p. 602), and McKinney suggests that "reticent group members would be less likely to seek information in group discussions, because this requires initiating communication which could place them in a possibly threatening situation" (McKinney, 1982, p. 125).

These investigations, then, indicate that shy individuals apparently attempt to avoid certain situations. Specifically, they are uncomfortable in certain social situations, and they demonstrate their discomfort by avoiding the initiation of conversation.

In summary, it appears that substantial numbers of persons suffer from severe communication apprehension and that the consequences of this malady are serious and far reaching.

The Utility of Behavioral Observations

Fundamental to the establishment of programs designed to assist apprehensive students is the availability of an appropriate mechanism to measure apprehension. The most widely used contemporary screening devices are self-report forms such as the Personal Report of Communication Apprehension (Hoffman & Sprague, 1982, p. 188). While this form has been proven a reliable and valid predictor for identifying apprehensives (Hoffman & Sprague, p. 187), self-report forms have recently been criticized for failing to determine actual speaking competence and communication avoidance behaviors (Neer, 1982, p. 205). A typical criticism of the limited utility of self-report is offered by Kelly, Phillips and McKinney (1982)

> A possibility is that the option designed to draw people with communication problems may only pick up those who are actively aware of their problem and concerned about it. It is possible that a large number of people are poor communicators but are either not aware of it or do not care. Still others may be fearful about speaking, but be excellent performers. There are no items on any of the scales that refer to personal perceptions of inadequacy, motivation to take training, or even the disabling features originally associated with concept "stagefright." None of the scales is coordinated with observation of behavior or face-to-face interviews.(p. 216)

These criticisms of the PRCA and other self-report forms have led Page (1978) to advocate the use of supplemental behavioral observations by trained observers. Specifically, he suggests that

> To admit anyone who volunteers or who scores at some level on a paper-and-pencil test is irresponsible. If the student happens to have a severe reticence or interpersonal anxiety problem in addition to speech anxiety, desensitization alone will often be unsuccessful, and the consequence of unsuccessful treatment can be devastating. Careful screening interviews are imperative as are referrals for students whose problems are outside the established scope of the problem. (pp. 359-361)

Phillips also offers support for including behavioral observations as a part of the diagnostic process and suggests in-depth interviews with prospective enrollees (cited in Neer, 1982, p. 205) while Kelly, Phillips and McKinney (1982, p. 276) argue that "the most valid predictor (of reticence) is a student who claims to have a problem, and his or her claim is confirmed by the observation of a trained interviewer (p. 216).

If behavioral observations are to constitute a valuable supplement to self-report forms, then increasing our knowledge of the behavioral correlates of apprehension should result in better diagnostic procedures. This notion is supported by Kelly (1982) who suggests that

> Theorists should focus their attention on improving methods of identifying the problem and on improving treatment programs. While we are able to identify a general population of persons whose communicative behavior is characterized by avoidance, anxiety, and often ineptitude, we know very little about individual

> differences within that group. In general, our research efforts need to concentrate on uncovering these differences. Such a focus might lead to a taxonomy of communication problems that is better able to discriminate sub-populations for treatment and research than the currently used general labels. (p. 112)

One potential area of behavioral identification appears to lie in the observation of apprehension-related patterns of behavior. Hence, expanding our knowledge of apprehensive behaviors would contribute to the process of supplementing self-report forms with behavioral observations.

In summary, behavioral observations by trained observers can serve to supplement self-report measures. The more knowledge observers possess about behaviors associated with apprehension, the more useful their observations should be.

Statement of the Problem

Investigations of Gaze and Communication Apprehension

Literature concerned with communication apprehension abounds with references to gaze avoidance behaviors by apprehensives (Zimbardo, Pilkonis & Norwood, 1975; McCroskey, 1976; Daly, 1977; Pilkonis, 1977; Pilkonis, Heape & Kline, 1980; McCroskey, 1980). Nevertheless, the research which generated the conclusion that highly apprehensive persons consistently lack eye contact appears to have possessed a questionable methodological foundation. McCroskey, for example, merely hypothesized that high apprehensives would lack eye contact and urged that this assertion be tested by future research (McCroskey, 1976, p. 44), while Pilkonis, Heape and

Kline included "reluctance to make eye contact" as a portion of their definition of shyness, but provided no empirical verification of this construct (Pilkonis, Heape & Kline, 1980, p. 250). Daly suggests that highly apprehensive persons "are reluctant to make eye contact in interaction" (Daly, 1977, p. 12), but supported this assertion by referring to an article by Zimbardo, Pilkonis and Norwood (1975). Unfortunately, although Zimbardo, Pilkonis and Norwood asserted that the shy person "frequently avoids eye contact" (p. 70) they, too, offered no empirical support for their assertion.

Finally, Pilkonis did attempt to empirically examine the gazing behavior of shy persons, but his methodology may have been flawed. Specific methodological difficulties with the Pilkonis study will be discussed at length later in this chapter, but it is important to initially recognize that references to apprehensives' gazing behaviors, while commonly cited, appear to flow from untested hypotheses and unverified definitions or can be traced to one empirical examination. In fact, Pilkonis's (1977) study of gazing behavior by shy persons appears to be the only actual test of eye contact by these persons.

Pilkonis conducted his research on a group of highly shy and highly non-shy subjects. He utilized students who were enrolled in an introductory psychology course at Stanford University and determined shyness levels from their scores on a short form of the Stanford Shyness Survey (Pilkonis, 1976). Pilkonis used only opposite-sex dyads for this research, and his investigation utilized confederates in each two-person group. The confederates encouraged conversation by asking scripted questions if no conversation naturally occurred and by glancing at their partners at least once every ten seconds during their time together. As part of a larger design, Pilkonis instructed his male and female subjects to wait for a five minute period in a room equipped with two permanently built-in videotape cameras which were visible to his subjects. The subjects were told that the videotape equipment would be used during the course of the experiment and were then videotaped as they waited in the room. Pilkonis's results indicated that his highly shy subjects had significantly less gaze and mutual gaze than his highly non-shy participants. Consequently, Pilkonis concluded that highly shy individuals typically engage in less gaze and mutual gaze than persons who are not shy (Pilkonis, 1977, p. 603).

Several questions can be raised about Pilkonis's methodology. First, it should be noted that, although many researchers use the two terms interchangeably, "shyness" and "apprehension" are not identical even though they share the notion that apprehensive persons attempt to avoid communication (McCroskey, 1976, 1982; Pilkonis, 1980). In fact, a recent investigation by McCroskey, Anderson, Richmond, and Wheeless (1981) yielded the conclusion that "shyness" and "apprehension" were only moderatley correlated (from .39 to .57, depending on sample), and that the shyness scale and the PRCA actually measured two different factors. The first factor, primarily associated with "apprehension" was "fear or anxiety," while the second factor, primarily associated with "shyness" was "shyness or verbosity" (p. 125). McCroskey, Anderson, Richmond and Wheeless (1981) concluded that "the validity coefficients for the shyness scale suggest this scale is not measuring CA as well as the PRCF. Rather it likely is tapping communication behavior related to CA, but not solely caused by CA" (p. 127). This research indicates that Pilkonis's findings do not necessarily generalize to communication apprehensives, and a similar investigation conducted on communication apprehensives utilizing the "personal report of communication apprehension" (McCroskey, 1982) would broaden our knowledge of apprehensives' gazing behaviors. Secondly, Pilkonis's research was not conducted in a naturalistic environment. His use of confederates utilizing scripted questions every twenty seconds and gazes "at least" every ten seconds was designed to force conversation from his highly shy subjects. His design, in other words, virtually mandated conversation and strongly hindered waiting in silence. Finally, the obvious presence of the two cameras may have been a potent intervening variable. Highly apprehensive persons suffer discomfort in ambiguous situations (McCroskey, 1982) are nervous around strangers (Zimbardo, 1977), and most of all, dislike being conspicuous. Specifically, McCroskey suggests that "probably nothing can increase CA more than being conspicuous in one's environment. Giving a public speech is a prime example of being conspicuous; so is standing up to make a comment in a meeting or classroom. Similarly, being the new person can make a person feel conspicuous. Generally, the more conspicuous people feel, the more CA they are likely to experience" (McCroskey, 1982, pp. 155-156). Hence, it would appear that the obvious presence of the two cameras along with the information that they would be "used later in the experiment" would heighten an apprehensive's feelings of conspicuousness. Taken together, the ambiguity of the situation (how are the cameras to be used? what is expected of me?,) the presence of the "stranger" (actually a confederate), and the potentially intimidating presence of the two cameras may have altered the behaviors of Pilkonis's subjects. In any event, this one experiment appears to represent a questionable basis for external generalizations. It would appear that a less intrusive design would provide better insight into apprehensives' gazing behaviors in a naturalistic environment.

Investigations of Personality, Mood and Apprehension

McCroskey, Daly and Sorenson's earlier conclusions regarding personality correlates of apprehension appear to merit additional investigation. Their research utilized Pearson product moment correlations to statistically test for relationships between apprehension levels and personality characteristics. Since this statistical procedure only determines that correlations exist between two variables and does not imply causality (Bartz, 1981,

p. 201) a more rigorous statistical procedure such as a multivariate analysis should yield a more accurate portrayal of the causes of high apprehension. Furthermore, McCroskey, Daly and Sorenson's (1976) conclusion that their highly apprehensive subjects suffered "severely debilitating" consequences of their apprehension (p. 380) was based on their comparison of high and low CAs' 16 PF scores. This comparison failed to indicate how subjects' scores compared to the normal range for the United States college student population. Because of the comparative nature of their investigation, their conclusions about the debilitating nature of high apprehension were not necessarily verified by their research.

Finally, no published research has investigated apprehensives' temporal mood states. The present investigation represented the initial attempt to determine if high and low CAs are characterized by differing moods.

Hypotheses

On the basis of a review of related research, the present investigation sought to test the following fourteen hypotheses.

> H_1 Highly apprehensive persons will express significantly greater anxiety about giving a speech before a camera than persons who are low in communication apprehension.

Hypothesis one predicted that highly apprehensive subjects would express more anxiety about speaking before a camera than subjects who were low in apprehension. The rationale for this prediction stemmed from the presumption that heightened feelings of conspicuousness would be generated for high CAs by the anticipation of speaking before a camera.

> H_2 High CAs will differ significantly in mood from low CAs.

The second hypothesis was also generated from circumstances in the experimental environment. Highly apprehensive subjects report discomfort around strangers and in ambiguous situations (Zimbardo, 1977, p. 37). Since subjects were specifically placed with strangers and were given ambiguous expectations about the "forthcoming experiment," hypothesis two predicted that high CAs would suffer greater mood disturbance than their low apprehensive counterparts.

> H_3 High CAs will differ significantly in personality from low CAs.

The third hypothesis was generated to discover if highly apprehensive persons differed in personality make-up from low CAs. Since CA is typically described as a "trait like characteristic" (McCroskey, 1977, p. 79), hypothesis three attempted to determine if high CAs would characteristically differ in personality make-up from low CAs.

> H_4 High CAs will gaze at their partners significantly less than low CAs.

> H_5 High CAs will engage in significantly less mutual gaze than low CAs.

The fourth and fifth hypotheses also stemmed from the notion that high CAs avoid communication with strangers. These hypotheses shared the common assumption that eye contact facilitates communication (McCroskey, 1976, p. 43). Hypotheses four and five predicted that high CAs would attempt to avoid communication by engaging in relatively little eye contact and mutual gaze.

H_6 High CAs will examine magazines significantly longer than low CAs.

Avoiding communication with another person, especially while waiting together in a small room, may be considered socially inappropriate. Since reading a magazine presents a socially acceptable excuse for not conversing, the sixth hypotheses predicted that high CAs would spend comparatively more time examining magazines than their low CA counterparts.

Hypotheses seven through twelve attempted to assess the differential influence of anticipated speaking before a camera for high and low CAs. As was previously noted, Pilkonis's (1977) investigation reported behavioral differences in highly shy and nonshy subjects. Although he found significant differences in the gazing behaviors of these two groups, Pilkonis failed to control for the potential confounding influence of the two cameras utilized in his research and their presence could have represented a significant intervening variable.

In his 1982 review of contemporary research on communication apprehension, McCroskey suggested that persons could be "highly apprehensive about communicating in one type of context while having less or even no apprehension about communicating in another" (p. 147). This "generalized context" apprehension is generated by specific communication settings such as giving a speech in public, etc. This notion generated hypotheses seven and eight, which attempted to determine if the presence of a camera would induce highly apprehensive persons to experience increased anxiety about communicating in this specific setting. The rationale for this expectation is generated from McCroskey's (1982) conclusion that "probably nothing can increase CA more than being conspicuous in one's environment" (p. 155). It appeared reasonable to assume that the presence of a camera would heighten feelings of conspicuousness for highly apprehensive persons and would bolster their generalized context anxiety. Persons who are low in CA, on the other hand, were not expected to be threatened by conspicuousness, since they are characterized by a general lack of anxiety about most communication settings (McCroskey & Richmond, 1982, p. 14).

One probable consequence of inducing high generalized context CA is avoidance behavior. Persons who are anxious about a communication experience would be expected to decrease their interaction and to avoid contact with others. Hyde (1980), for example, suggests that "the more anxious or fearful persons are about engaging in a given communication situation, the less likely they will perform in a way society deems acceptable. As a result, such persons attempt to avoid or withdraw from interaction" (p. 140). The concept that persons who experience a high degree of generalized context CA will avoid interaction generated the following research hypotheses.

H_7 Highly apprehensive persons who anticipate speaking before a camera will gaze at their partners for significantly less time than highly apprehensive persons who do not anticipate speaking before a camera.

H_8 Highly apprehensive persons who anticipate speaking before a camera will engage in significantly less mutual gaze than highly apprehensive persons who do not anticipate speaking before a camera.

These hypotheses shared the common notion that high CAs in the "threat" condition would experience greater generalized context anxiety than high CAs in the "no threat" condition. The predictions of these hypotheses were based on the premise that high CAs experiencing generalized context anxiety would gaze and mutually gaze less than high CAs who did not experience generalized context anxiety.

H_9 Low apprehensives who anticipate speaking before a camera will differ in their gazing behavior from low apprehensives who do not anticipate speaking before a camera.

H_{10} Low apprehensives who anticipate speaking before a camera will differ in their mutual gazing behavior from low apprehensives who do not anticipate speaking before a camera.

Hypotheses nine and ten attempted to assess the effects of anticipation of speaking before a camera on low CA subjects. Since low CAs are characterized by a general lack of anxiety about participating in virtually any communication setting, these hypotheses attempted to determine if significant differences existed for low CA subjects in threat and no threat conditions.

H_{11} Highly apprehensive persons who anticipate speaking before a camera will differ significantly in mood from highly apprehensive persons who do not anticipate speaking before a camera.

This hypothesis was predicated on the notion that highly apprehensive persons in the "threat" condition would experience greater generalized context anxiety than high CAs in the "no threat" condition, and that the subsequent increased anxiety would affect subjects' moods.

H_{12} Low CAs who anticipate speaking before a camera will significantly differ in mood from low CAs who do not anticipate speaking before a camera.

Hypothesis twelve attempted to determine the influence of anticipated speaking before a camera on low CA subjects. Since these persons generally suffer little anxiety about communicating in any setting, this hypothesis attempted to assess significant mood differences for low CA subjects in "threat" and "no threat" conditions.

H_{13} Highly apprehensive subjects who anticipate speaking before a camera will examine magazines significantly longer than highly apprehensive subjects who do not anticipate speaking before a camera.

H_{14} Low CA subjects who anticipate speaking before a camera will differ in their magazine examination from low CA subjects who do not anticipate speaking before a camera.

The final hypotheses were predicated on the notion that highly apprehensive persons who are placed in a threatening communication setting will withdraw and avoid interaction with others. Since such behavior is often perceived as socially inappropriate, high CAs may be motivated, when possible, to offer a socially acceptable rationale for their behavior. The presence of the magazines on the table between the subjects was a potential source of such an explanation. The act of picking up a magazine while waiting with another person is potentially a means of conveying that one wishes to read and prefers not to converse. Hence, highly apprehensive persons who were motivated to withdraw from conversation might choose to examine magazines as a socially acceptable alternative to conversation.

CHAPTER II

METHODOLOGY

The methodology utilized for this research was essentially a replication of designs used by Pilkonis (1977) and Cary (1978). A difference between the present research and these earlier investigations was the use of several scales designed to assess apprehension, personality, and mood state, and the non-intrusive location of the hidden camera.

Subjects

Subjects were selected from communication classes at the University of Central Florida during the "B" term of the 1983 summer semester. From an original subject pool of over three hundred undergraduates, a total of sixty students were selected on the basis of their scores on the PRCA-24 Communication Apprehension Scale (see Appendix B). Thirty of these subjects were classified as highly apprehensive, while the remaining half of the subject population was categorized as "low in apprehension." In a few cases, students who scored in the "low normal" range of the PRCA were included in the "low apprehensive" category in order to equalize the populations of the two groups (N=6).

The PRCA-24 was utilized for this research because it has proven to be a reliable and valid means of identifying communication apprehensives. Since this scale was introduced by McCroskey in 1970, it has been utilized in over fifty investigations and has consistently yielded reliability estimates of above .90 (McCroskey, 1977, p. 83). Additionally, a summary of the research utilizing this scale provides clear evidence of its validity (McCroskey, 1978). McCroskey's original "Personal Report of Communication Apprehension" scale, the PRCA-25, has recently been revised due to criticism regarding its heavy emphasis on fear of public speaking. The most recent version of the PRCA, the PRCA-24 (McCroskev, 1982), has overcome this difficulty and is presently the preferred version. The internal reliability of this instrument is .94 and the total score correlates with earlier versions above .90. Data from over ten thousand subjects indicate that PRCA-24 scores form a normal distribution with a mean of 65.6 and a standard deviation of 14.1 (McCroskey, 1982, pp. 167-168).

The present research defined those subjects who scored at least one standard deviation above the mean as "highly apprehensive" and those scoring at least one standard deviation below the mean as "low apprehensives." This procedure is harmonious with most other CA research because it allows for the most accurate comparison of behaviors of apprehensive and non-apprehensive persons. McCroskey, for example, endorses this approach because

> For research purposes this is a particularly good distinction. The researcher can be reasonably assured that the people classified as "high" are truly different from those classified as "low." These two groups are the ones that theoretically should manifest differential behaviors related to

> the measure. Those in the middle, the "normals," actually may have no consistent pattern of behavior particularly if the measure is a personality-type measure. The middle scores most likely indicate that this is a facet of personality not highly associated with the behavior of these individuals. Other personality elements, or situational constraints, may completely dominate their behavior to the exclusion of this particular personality valiable. (McCroskey, 1982, p. 152)

Student volunteers selected to participate in this research were contacted by the experimenter and requested to report to the experimental room at a specified time. Subjects who were to wait together during the video recording reported to separate rooms and did not come into contact with each other until they were escorted to the taping room. Subjects were escorted individually to the taping room with the first student being seated in a standard location before the second student arrived, and both were asked if they were acquainted with one another before the taping started. Only unacquainted subjects were utilized for this research. After both subjects were seated, taping began and was continued for five minutes.

Taping Facilities

The room used for taping was a four by five meter conference room equipped with a one-way mirror on the wall nearest the door. Behind the wall containing the mirror was a small observation room equipped with a remotely-controlled camera. A microphone was located at the intersection of two ceiling panels, allowing for unobtrusive recording of verbal exchanges. Both the camera and the microphone were effectively disguised. The room was equipped with two chairs which were placed on either side of a small magazine table. The chairs faced the viewing mirror, and three magazines were placed on the table. These three publications had been carefully selected to be uninteresting to college students and represented the three least interesting periodicals from a survey of over thirty magazines conducted the semester prior to the experiment. The three selected magazines were Texas Monthly, Colonial Homes and Inc. --The Magazine for Growing Companies. Since subjects were requested to leave their books outside the room, the magazines represented the only available diversion in the taping room.

Procedure

Subjects were paired according to their apprehension levels. This procedure resulted in thirty pairs of subjects with the pairings equally distributed between ten highly apprehensive pairs, ten high/low apprehensive pairs and ten pairs of low apprehensives. Additionally, half the pairs of subjects were placed in a "no threat" condition, and the remaining subjects were placed in a "threat" condition. Threat was manipulated by informing subjects at the beginning of the five-minute taping session that, after a brief wait, they would be requested to "give a speech to a camera." "No threat" subjects were only told that they would be asked to "fill out a few forms." In order to insure the viability of the "threat" manipulation, one additional question had been added to the previously administered PRCA-24 apprehension test. This question, graded separately from the PRCA-24's, asked students if they "found the prospect of giving a speech before a camera threatening." An analysis of the subjects' answers indicated that highly apprehensive students felt significantly more threatened at this prospect than did their low apprehensive counterparts ($p = .0001$).

After the students "waited" (and were unobtrusively taped) for five minutes, they were taken to another room and requested to complete the Profile of Mood States and Sixteen PF Inventories. The Profile of Mood States or POMS test is a six-factor mood inventory which consists of 65 five-point adjective rating scales (McNair, Lorr, & Droppleman,1981, pp. 9-10). It is designed to measure subjects' temporal, state-like moods regarding feelings of tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment. POMS scores can also be totaled across these dimensions (weighing vigor negatively) to yield a total mood disturbance score. The POMS test is highly reliable, with individual items within the six mood scales correlating near or above .90 with the specific scale itself. Test-retest reliability of the six factors ranges from .65 to .74, which indicates that subjects' moods tend to fluctuate over time. The POMS, in other words, does not measure comparatively stable dimensions such as personality traits, and the relatively low test-retest reliability lends support to the notion that the POMS is a valid index of subjects' mood states at a given point in time. Finally, numerous studies conducted on varying populations have established the validity of the POMS test (McNair, Lorr, & Droppleman, 1981).

The Sixteen Personality Factor test is a measure of sixteen personality-type traits. Since its initial development in 1949, this widely used instrument has been proven highly reliable, with subjects scoring consistently on retests given from two to forty-eight months after initial testing. Numerous investigations have also established the 16 PF's validity (Cattell, Eber, & Tatsuoka, 1970). In fact, the 16 PF has been described as "probably the most carefully developed and validated measure currently in use" (McCroskey, Daly, & Sorenson, 1976, p. 376).

After the completion of the 16 PF and the POMS tests, subjects in the threat condition were told that they would not have to give speeches to the camera. All subjects were thoroughly debriefed and dismissed. Included in the debriefing was an explanation of the necessity of the unobtrusive recording of the students' behaviors while they waited in the taping room. Students were informed that they had the right to order the tapes erased prior to their viewing and one student did, in fact, choose this option. His tape was subsequently erased and an additional pair was utilized in its place. Other subjects freely allowed their recordings to be used.

Analysis of Recordings

Analysis of the tapes was undertaken by four trained observers who used chronographs (stop watches) to determine each subject's gaze time (defined as the total time the subject looked at the fact of the other subject), mutual gaze time (defined as the total time subjects mutually looked at each others' faces), and magazine time (defined as the total time a subject actively perused one of the three available magazines). The phrase "actively perused" was defined as "actually looking at or reading" a magazine, since a few subjects picked up magazines, glanced at them briefly, and then placed them in their laps for the duration of the five minute period. Merely holding a magazine but not examining it was not counted as "magazine time." Two observers separately timed each subject for gaze and magazine time, and two observers also timed mutual gaze time. The observers received extensive training in the timing procedure by the experimenter. Furthermore, the use of two timers for the analysis of each of the subjects' behaviors served as a mutual check for errors. When the observers' times for each of the three behaviors were within ten seconds of one another, their times were averaged to yield a final score. If their times diverged by more than ten seconds, the sequence was retimed. The timers were unaware of subjects' PRCA scores while they timed the interactions, thus eliminating a source of potentially confounding bias. Finally, the experimenter randomly timed interactions with the two observers, yielding an additional assurance of accurate ratings. This methodological procedure yielded highly accurate judgments of subject's gazing, mutual gazing and magazine perusal behaviors during the analysis of the five minute taping sequences.

CHAPTER III

RESULTS

This chapter presents the results of the pre-experimental apprehension questionnaire and measure of anxiety about speaking before a camera. Also included are the mean scores for the dependent measures (gaze time, mutual gaze time, mood disturbance, personality, and magazine perusal time). Finally, the results of the study's fourteen hypotheses are reported.

Statistical Analysis

The differences in the cell means were tested with multivariate analysis of variance according to the procedures authored by Bock (1963). (The model for the procedure is $Y = A \S + E$ where Y is the matrix of all means $\S$ is the matrix parameters to be tested, A is the appropriate design matrix and E is the matrix of error variates.) The main effects and interactions were tested according to the specification of single degree of freedom planned contrasts. Initially, multivariate F ratios were derived for each contrast followed by univariate values for each variable.

The results of the multivariate tests for interactions for apprehension, threat and pair composition yielded no statistically significant interaction effects. The results of the multivariate tests are found in Tables 1 and 2.

Table 1

Multivariate Test for Interactions
for Apprehension and Pair Composition

	Variable	Hypothesis Mean Sq	Univariate F	P Less Than
1	Gaze	8833.0625	1.8315	0.1814
2	Mutual Gaze	1960.8154	0.4715	0.4952
3	Magazine Time	9881.6562	2.3147	0.1338
4	16 PF 1	0.2667	0.0647	0.8002
5	16 PF 2	0.8167	0.4142	0.5225
6	16 PF 3	1.3500	0.2990	0.5867
7	16 PF 4	0.0667	0.0109	0.9173
8	16 PF 5	0.0667	0.0232	0.8795
9	16 PF 6	0.8167	0.1601	0.6907
10	16 PF 7	4.8167	0.7902	0.3779
11	16 PF 8	4.8167	1.1475	0.2887
12	16 PF 9	3.2667	0.7510	0.3899
13	16 PF 10	6.0167	1.1914	0.2797
14	16 PF 11	0.0	0.0	1.0000
15	16 PF 12	0.1500	0.0248	0.8754
16	16 PF 13	0.1500	0.0252	0.8744
17	16 PF 14	0.0667	0.0126	0.9112
18	16 PF 15	0.4167	0.0970	0.7567
19	16 PF 16	6.0167	1.2279	0.2726
20	POMS 1	6.6668	0.0943	0.7599
21	POMS 2	40.0166	0.5793	0.4498
22	POMS 3	48.6000	0.6355	0.4288
23	POMS 4	58.0162	0.9977	0.3222
24	POMS 5	22.8167	0.3181	0.5751
25	POMS 6	32.2666	0.5217	0.4732

Table 2

Multivariate Test for Interactions for Apprehension and Threat Condition

Variable	Hypothesis Mean Sq	Univariate F	P Less Than
1 Gaze	7752.0625	1.6074	0.2101
2 Mutual Gaze	144.1499	0.0347	0.8530
3 Magazine Time	734.9976	0.1722	0.6798
4 16 PF 1	0.2667	0.0647	0.8002
5 16 PF 2	2.8167	1.4287	0.2370
6 16 PF 3	2.0167	0.4467	0.5067
7 16 PF 4	3.2667	0.5341	0.4680
8 16 PF 5	0.6000	0.2090	0.6494
9 16 PF 6	2.0167	0.3952	0.5322
10 16 PF 7	8.8167	1.4465	0.2342
11 16 PF 8	3.7500	0.8934	0.3487
12 16 PF 9	11.2667	2.5900	0.1132
13 16 PF 10	0.0167	0.0033	0.9544
14 16 PF 11	0.0	0.0	1.0000
15 16 PF 12	1.3500	0.2235	0.6383
16 16 PF 13	7.3500	1.2358	0.2711
17 16 PF 14	13.0667	2.4610	0.1224
18 16 PF 15	2.0167	0.4695	0.4961
19 16 PF 16	0.0167	0.0034	0.9538
20 POMS 1	123.2659	1.7444	0.1920
21 POMS 2	50.4157	0.7299	0.3966
22 POMS 3	256.2661	3.3507	0.0725
23 POMS 4	0.4166	0.0072	0.9329
24 POMS 5	58.0166	0.8088	0.3724
25 POMS 6	0.0667	0.0011	0.9740

Although no predictions were formulated for interactions for subject's sex, a multiple regression analysis indicated that this variable was not a significant contributor to any main effects. Multiple regression was utilized to test for interactions on this variable because the uneven sexual population and the large number of other interacting variables made the use of the multivariate procedure inappropriate for testing for sexual interactions.

Self-Report Scales

During the course of the present experiment, subjects completed three self-report forms. The first of these scales, the "personal report of communication apprehension-24" was completed several weeks prior to the experimental manipulation. This scale, administered to over three hundred University of Central Florida undergraduates, was utilized to identify and select high and low CA subjects for the present research. Two additional scales, the "16 Personality Factor" test and the "Profile of Mood States" inventory, were completed directly after the experimental manipulation.

Pre-Experimental Questionnaire

The PRCA-24 is a 24 item measure of communication apprehension. This scale is the most recent of several PRCA scales developed by McCroskey (1982) for the measurement of CA. PRCA-24's were administered during the first week of class of the "B" term of the summer 1983 semester. The mean score for subjects completing this instrument is 65.6 with a standard deviation of 14.1 (McCroskey, 1982, pp. 167-168). On the basis of scores on this measure, 30 subjects were selected because their scores indicated that they were more apprehensive than persons in the normal population. These subjects, categorized as "highly apprehensive," all scored above 80 on the PRCA-24. Their mean score was 89.3. The remaining 30 students were categorized as "low apprehensives." Twenty-four of these subjects scored below 52 on the PRCA-24 scales, while six scored below 56. Although the six students who scored between 52 and 56 actually scored in the "low normal" category of the PRCA-24 scale, they were included to equalize the sample populations of the two groups since only 24 subjects scored below 52 on the PRCA-24's. The mean score for low CA subjects was 47. The results of the PRCA-24 tests are found in Table 3.

One additional question was included on the PRCA-24 tests. This item, designed to assess students' responses to the anticipation of speaking before a camera, requested students to react to the statement "I find the prospect of speaking in front of a camera threatening." Students responded to this statement by indicating their choices of the appropriate response on a five-point scale, with "one" indicating "strongly agree" and "five"indicating "strongly disagree." The mean score for all subjects on this question was 3.16, with a mean for high CA's of 1.76 and a mean of 4.56 for students in the "low apprehension" category. The differences in the two groups' answers indicated that highly apprehensive subjects found the anticipation of speaking before a camera significantly more threatening than their low apprehensive counterparts ($p = .0001$). The results of the "fear of camera" question are found in Table 4.

Table 3

PRCA-24 Mean Scores

High CA Mean	Low CA Mean	Population Mean
89.3	47.4	65.6

Table 4

Anticipated Feeling About Speaking Before a Camera

High CA Mean	Low CA Mean	Sample Mean
* 1.76	4.56	3.16

* $p < .05$

Post-Experimental Questionnaires

Immediately after waiting with their partners, subjects were instructed to complete the two post-experimental questionnaires. The first of these measures, the Profile of Mood States, was an item measure designed to assess subjects' temporal mood states. The results of the Profile of Mood States (POMS) Tests indicated that high and low CA subjects differed significantly in several mood dimensions (see Table 5).

The first of the six POMS dimensions was "tension." On this dimension, the mean score for high CAs was 48.3 while the mean score for low CAs was 42.1. The results of a univariate F test indicated that the differences in these groups mean scores were significantly different (p = .006), indicating that highly apprehensive subjects felt significantly more tension than their low apprehensive participants.

The second POMS dimension was "depression." On this factor, highly apprehensive subjects' mean score was 47.1 while low CA subjects' mean was 42.7. The results of a univariate F test indicated that the difference for the two groups mean scores was statistically different (p = .046).

The third POMS dimension assesses subjects' feelings of anger. On this dimension, high CA subjects' mean score was 47.23 while low CA subjects' mean was 44.70. The difference in these means was not statistically significant (p = .266).

The fourth POMS dimension assessed subjects' feelings of vigor. The mean score for highly apprehensive subjects was 50.6 while low CA subjects averaged a mean of 61.36. The difference in the two means was statistically significant (p = .0001).

The fifth POMS dimension gauged subjects' feelings of fatigue. The mean score for highly apprehensive subjects on this item was 48.3 while the mean for low CA subjects was 43.96. These means differed significantly (p = .05).

The sixth POMS dimension attempted to determine subjects' feelings of confusion. The mean score on this dimension for highly apprehensive subjects was 43.36, while low CA respondants' mean score was 37.30. The difference in these scores was statistically significant (p = .0234).

The final dimension of the POMS is the "total mood disturbance" score. This score is achieved by summing subjects' POMS scores for the six dimensions (weighing vigor negatively) and yields a global estimate of affective state (McNair, Lorr & Droppleman, 1981, p. 9). The mean score for highly apprehensive subjects on this dimension was 57.06, while low CA subjects mean was 32.16. The difference for the two means was significant (p = .001), indicating that highly apprehensive subjects were generally more disturbed than their low CA counterparts.

The second post-experimental questionnaire, the "Sixteen Personality Factor" scale, was completed as soon as subjects finished the "POMS" tests. Unlike the "POMS," the "16 PF" is designed to assess relatively permanent, trait-like personality characteristics. After subjects' scores were tabulated, a one-way analysis of variance was utilized to compare the mean scores of high and low apprehensive subjects. The results of this comparison are found in Table 6.

As is indicated from the data in Table 6, high and low CA subjects' scores differed significantly on seven dimensions. The first significantly different dimension, PF factor C, attempted to

Table 5

Subjects Profile of Mood States Scores

Mood Factor	High CA Mean	Low CA Mean	Normal Range for College Population
Tension	48.30*	42.10	40-60
Depression	47.10*	42.73	40-60
Anger	47.23	44.70	40-60
Vigor	50.06*	61.36**	40-60
Fatigue	48.33*	43.96	40-60
Confusion	43.36*	37.30**	40-60

* $p < .05$

** Mean score falls outside normal range
for U.S. college-age population

Table 6

16 PF Scores for High and Low CA Subjects

Personality Measure			High CA Subjects	Low CA Subjects	College Student Population Norm
Factor A	-	Cyclothymia	9.00	9.53	8.73
Factor B	-	Intelligence	4.83	5.07	4.85
Factor C	-	Emotional Maturity	6.23 *	7.80	6.88
Factor E	-	Dominance	6.33 *	7.60 **	5.40
Factor F	-	Surgency	6.66 *	8.80	6.94
Factor G	-	Character	7.40	7.23	6.86
Factor H	-	Adventurousness *	6.13 *	9.50 **	6.39
Factor I	-	Sensitivity	7.17	7.47	6.62
Factor L	-	Trustfulness	5.53	5.33	5.60
Factor M	-	Eccentricity	5.93	6.37	5.57
Factor N	-	Sophistication	4.33	3.53	4.84
Factor 0	-	Confidence	7.33 *	5.30	6.96
Factor 01	-	Radicalism	6.23 *	7.60 **	6.38
Factor 02	-	Self Sufficiency	4.83	3.70	4.05
Factor 03	-	Self Control	6.50	7.47	7.41
Factor 04	-	Anxiety	7.37 *	5.47	6.47

* $p < .05$ for difference in high and low CA means

** Mean falls outside first standard deviation for college age population assess emotional maturity. Persons whose scores are low on this dimension are characterized by low frustration, tolerance, fatigue, fretfulness, and are easily annoyed, while persons who score high tend to be emotionally mature, stable, and unruffled (IPAT Staff, 1979, p. 21). The mean of 7.80 for low CA subjects' scores indicates that these persons were significantly more emotionally mature than their high CA counterparts, whose mean score was 6.23 ($p = .006$).

The second dimension on which high and low CA subjects' scores differed significantly was PF factor E-Dominance. The mean score for high CA subjects on this factor was 6.33, while the mean score for low CAs was 7.60, indicating that the means for the two groups differed significantly ($p = .05$). Persons who score high on this factor are characterized by assertiveness and aggressiveness. They are typically authoritative, competitive and stubborn. Individuals who score low on this dimension, conversely, tend to be humble, mild, accommodating and conforming (IPAT Staff, 1979, p. 21).

The third dimension which yielded significant differences in high and low CAs mean scores was PF factor F-Surgency. The mean score for high CA subjects on this factor was 6.66, while the mean for low CAs was 8.80. The means for the two groups differed significantly ($p = .0001$), indicating that low CAs were more impulsive, lively, and enthusiastic than their high CA counterparts. High CA subjects' scores, on the other hand, indicated that they were more sober, prudent, and serious than were low CAs (IPAT Staff, 1979, p. 21).

The fourth category which yielded significantly different results for high and low CA subjects was PF factor H-Adventurousness. The mean score for high CAs on this dimension was 6.13 and the mean for low CAs was 9.50. Persons scoring low on this dimension tend toward shyness, restraint, and timidity, while individuals who score high are characterized by boldness, lack of inhibition, and spontaneity (IPAT Staff, 1979, p. 22). The difference in the means for the two groups indicated that low CAs scored significantly higher than high CAs on this dimension (p = .0001).

The fifth factor on which high and low CAs' scores differed significantly was factor O-Confidence. Persons with low scores on this dimension tend to be unruffled, mature, and unanxious. They are also confident, resilient and secure. On the other hand, persons who score high on this dimension are characterized by anxiety and guilt. They dislike participating in groups and often worry about problems (IPAT Staff, 1979, p. 25). A comparison of the mean scores for high and low apprehensive subjects indicated that persons with high CA were significantly less confident than persons with low CA (p = .01). The mean score for high CA subjects was 7.33, while the mean for low CAs was 5.30.

The sixth 16 PF dimension on which high and low CAs mean scores significantly differed was factor σ1-Radicalism. The mean for high CA subjects on this factor was 6.23 while the mean for low CA's was 7.60. The difference in the means for the two groups was statistically significant (p = .034), indicating that high CAs were more conservative and traditionally-oriented than low CAs who tended more toward liberality and innocation (IPAT Staff, 1979, p. 25).

The final dimension on which high and low CAs' mean scores differed was PF factor $\sigma 4$-Anxiety. Persons who score high on this dimension are characterized by tension, frustration and restlessness, while individuals who score low are characterized by tranquility and relaxation (IPAT Staff, 1979, p. 27). High CAs' mean score on this dimension was 7.37, while the mean for low CAs was 5.47. The difference in the means for the two groups was statistically significant (p = .0016).

Hypothesis Test Results

The first hypothesis was posed in an effort to determine if high and low CAs differed in their perceptions about delivering a speech before a camera:

> H1: Highly apprehensive persons will express significantly greater anxiety about giving a speech before a camera than persons who are low in communication apprehension.

The results of a univariate F test conducted on subjects' answers to the statement, "I find the prospect of speaking in front of a camera threatening" indicated that highly apprehensive subjects reported significantly more anxiety about this situation than subjects who were low in apprehension (p = .0001).

The second hypothesis attempted to determine if high and low apprehensive subjects differed in mood composition:

H2: High CAs will differ significantly in mood
from low CAs.

The results of the univariate F test indicated that high CAs differed from low CAs on five of the six dimensions of the Profile of Mood States test. Specifically, high CA subjects reported greater tension (p = .006), depression (p = .046), fatigue (p = .050) and confusion (p = .0234) than low CA subjects. They also reported less vigor (p = .0001) and more total mood disturbance (p = .001). No differences between the two groups were found for the "anger" dimension (p = .266). The results of the Profile of Mood States test are reported in Table 5.

The third hypothesis attempted to determine if high and low CAs differed in selected personality characteristics:

H3: High CAs will differ significantly in
personality from low CAs.

The results of the univariate F test indicated significant differences for high and low CAs on seven of the 16 PF dimensions. Specifically, high CA subjects reported less emotional stability (p = .006) and greater tension (p = .001) than low CA subjects. Their 16 PF scores also indicated that they were more submissive (p = .05), restrained (p = .0001) and conservative (p = .034) than their low CA counterparts. Finally high CA subjects' scores also indicated significantly more shyness (p = .0001) and less self assurance (p = .0009) than low CA subjects. The complete results of the 16 PF tests are reported in Table 6.

The fourth hypothesis was posed in an effort to determine if highly apprehensive subjects gazed less than low apprehensives:

> H4: High CAs will gaze at their partners significantly less than low CAs.

The results of the univariate F test conducted to test this hypothesis indicated that highly apprehensive subjects gazed at their partners for significantly less time than did subjects who were low in apprehension (p = .001).

The fifth hypothesis attempted to determine if high CAs engaged in less mutual gaze than low CAs:

> H5: High CAs will engage in significantly less mutual gaze than low CAs.

The results of the univariate F test indicated that high CAs engaged in significantly less mutual gaze than low CAs (p = .009). The results of the univariate F test for hypotheses four and five are reported in Table 7.

The sixth hypothesis attempted to determine if high CAs would examine magazines longer than low CAs:

> H6: High CAs will examine magazines significantly longer than low CAs.

The results of the univariate F test indicated that no significant differences existed in the magazine examination time for the two groups (p = .150). The results of the univariate F test of hypothesis seven are reported in Table 7.

Table 7

Gaze, Mutual Gaze, and Magazine Time for High and Low Apprehensive Subjects

	Mean Gaze (in seconds)	Mean Mutual Gaze	Mean Magazine Time
High CAs	115.36*	79.06*	45.06
Low CAs	185.16	134.43	20.46

* $p < .05$

The seventh, eighth, ninth and tenth hypotheses attempted to determine if subjects placed in the "threat" condition would differ in gaze from subjects in the "no threat" condition:

> H7: Highly apprehensive persons who anticipate speaking before a camera will gaze at their partners for significantly less time than highly apprehensive persons who do not anticipate speaking before a camera.

The results of the univariate F test indicated no significant difference in gaze for high CA subjects in the "threat" and "no threat" conditions ($p < .075$).

The eighth hypothesis attempted to determine if highly apprehensive subjects in the "threat" condition would engage in less mutual gaze than highly apprehensive subjects in the "no threat" condition:

> H8: Highly apprehensive subjects who anticipate speaking before a camera will engage in significantly less mutual gaze than highly apprehensive subjects who do not anticipate speaking before a camera.

The results of a univariate F test indicated that no significant difference in mutual gaze occurred for the two groups ($p = .54$).

The ninth hypothesis attempted to determine if low apprehensive subjects in the "threat" condition would gaze less than low apprehensive subjects in the "no threat" condition:

> H9: Low apprehensives who anticipate speaking before a camera will differ significantly in their gazing behavior from low apprehensives who do not anticipate speaking before a camera.

The results of the univariate F test indicated that there was no significant difference in gaze time for the two groups ($p = .61$).

The tenth hypothesis attempted to determine if low apprehensive subjects in the "threat" condition would mutually gaze less than low apprehensive subjects in the "no threat" condition:

> H10: Low apprehensives who anticipate speaking before a camera will differ significantly in their mutual gazing behavior from low apprehensives who do not anticipate speaking before a camera.

The results of a univariate F test indicated that there was no significant difference in mutual gaze time for the two groups ($p = .68$).

The next two hypotheses attempted to determine if high and low CA subjects' moods were affected differentially by "threat" and "no threat" conditions:

> H11: Highly apprehensive persons who anticipate speaking before a camera will differ significantly in mood from highly apprehensive persons who do not anticipate speaking before a camera.

H12: Low CAs who anticipate speaking before a camera
will differ significantly in mood from low CAs
who do not anticipate speaking before a camera.

The results of a univariate F test conducted on hypothesis 11 indicated no significant differences in mood for high CA subjects in "threat" and "no threat" conditions.

The results of a univariate F test conducted on hypothesis 12 indicated no significant differences in mood for low CA subjects in "threat" and "no threat" conditions.

The results of the test of hypotheses 11 and 12 are reported in Tables 8 and 9.

Table 8

Mean POMS Scores for High CA Subjects in Threat and No Threat Conditions

POMS Factor	High Apprehensive Threat Mean	High Apprehensive No Threat Mean
Tension	50.07	46.53
Depression	47.20	47.00
Anger	50.20	44.27
Vigor	49.00	51.13
Fatigue	49.93	46.73
Confusion	42.60	44.13

* p = .05

Table 9

Mean POMS Scores for Low CA Subjects
in Threat and No Threat Conditions

POMS Factor	Low Apprehensive Threat Mean	Low Apprehensive No Threat Mean
Tension	43.20	41.00
Depression	44.47	41.00
Anger	45.87	43.53
Vigor	62.27	60.47
Fatigue	44.33	43.60
Confusion	39.33	37.93

* p = .05

The final two hypotheses attempted to determine if high and low CA subjects in "threat" and "no threat" conditions would examine magazines for differential periods of time. Hypothesis 11 predicted differences in magazine examination time for highly apprehensive subjects in "threat" and "no threat" conditions:

> H13: Highly apprehensive subjects who anticipate speaking before a camera will examine magazines significantly longer than highly apprehensive subjects who do not anticipate speaking before a camera.

The results of a univariate F test indicated no significant difference in magazine examination time for high CA subjects in the "threat" and "no threat" conditions (p = .52).

Hypothesis 14 predicted no differences in magazine examination time for low CA subjects in the "threat" and "no threat" conditions:

> H14: Low CA subjects who anticipate speaking before a camera will differ significantly in their magazine examination time from low CA subjects who do not anticipate speaking before a camera.

A univariate F test indicated no significant difference in magazine examination time for low CA subjects in the "threat" and "no threat" conditions ($p = .068$).

CHAPTER IV

DISCUSSION

The most significant finding of the present research was the main effects for gaze avoidance by highly apprehensive subjects. As noted in Chapter I, previous conclusions on gaze avoidance by highly apprehensive persons were based upon unproven hypotheses and one methodologically questionable investigation. The present research, by utilizing more naturalistic procedures and an improved scale for the measurement of apprehension, provided a more secure basis for generalizations about apprehensives' gazing behaviors. In conditions of both threat and no threat, highly apprehensive subjects gazed and mutually gazed significantly less than their low apprehensive counterparts. Other significant findings, however, also contribute to our knowledge of apprehensive persons' behaviors.

The first hypothesis attempted to determine if the anticipation of speaking before a camera would affect differential responses by high and low CAs. The results indicated that these persons' perceptions about speaking in front of a camera varied considerably. While low CAs generally reported little anxiety about speaking before a camera, high CAs typically responded that they would suffer anxiety when confronted with this situation. This discovery appears to indicate that the obvious use of cameras in research on high CAs should be undertaken with caution.

This finding also appears to offer support for McCroskey's (1982) notion that feelings of conspicuousness heighten feelings of anxiety for highly apprehensive persons. Since speaking before a camera can be reasonably assumed to heighten feelings of conspicuousness, the finding that high CA subjects reported that they would suffer anxiety in this setting offers indirect support for McCroskey's theoretical position.

Although high CA subjects reported that they would suffer anxiety about speaking before a camera, the results of their self reports were not behaviorally manifested in this investigation. None of the hypotheses which predicted significant differences for high CA subjects in the "threat" and "no threat" conditions were confirmed. Hence, although the present investigation confirms the existence of differential attitudes about cameras between high and low CA subjects, the behavioral impact of these differences must be determined by future research.

The results of this test of the second hypothesis provide support for the notion that highly apprehensive persons suffer greater mood disturbance than persons who are low in communication apprehension. Since the present investigation was the first research on CA to utilize the Profile of Mood States test, its findings offer unique insight into the temporal mood states of high and low CAs.

The results of the POMS tests indicated that highly apprehensive persons suffered significantly greater mood disturbance than persons who were low in apprehension. The Profile of Mood States measured six independent aspects of mood as well as a "total mood of disturbance." Results of this investigation indicated that highly apprehensive persons were significantly more tense, depressed, fatigued, and confused than low CA subjects. Although they did not report being significantly angrier than low CA subjects, their scores did indicate significantly less vigor than their low CA counterparts.

The "mood of total disturbance" score is a general indicator of total mood. While it is less specific than other POMS scores, it does serve to offer a general estimate of mood disturbance. Since the total mood disturbance was significantly higher for high CAs than low CAs, the results of this aspect of the POMS test indicated that high CAs were in a more disturbed frame of mind than low CAs. Taken together, the results of the POMS tests strongly verified the second hypothesis and offered evidence of a newly discovered aspect of high apprehension. Furthermore, the finding that high CAs suffered more tension, depression, fatigue and confusion than low CAs may help to explain why these persons avoid communication.

Initial perusal of the POMS data appeared to yield a rather bleak portrait of the typical highly apprehensive subject. When compared to typical low CA subjects, these subjects appeared to suffer significantly greater tension, depression, fatigue and confusion. These subjects also possessed significantly less vigor than the average low CA individual. These findings, however, took on new meaning when compared to population norms. When the data were viewed from this perspective, they revealed that high CA scores on the six POMS dimensions all fell within the normal range of the college student population. In other words, when compared to low CAs, highly apprehensive subjects were more tense, depressed, fatigued, confused and less vigorous. But when compared to the normal college population, these individuals' scores fell within the first standard deviation. Their mood states, in other words, characterized as normal.

Low CA subjects, on the other hand, scored outside the first standard deviation on two of the six dimensions. Their mean score of 61.36 on the "vigor" dimension indicated that they felt significantly more vigorous than members of the typical U.S. college population, and their mean score on the "confusion" dimension of 37.30 indicated that they felt less confused than most of their peers.

Viewed from the perspective of typical mood states for the United States college population, the POMS data characterized high CA subjects' moods as normal. While high and low CA subjects did differ significantly on five of the six dimensions, three of these differences (tension, depression, and fatigue), although statistically significant, were contained within the normal range of college students' mood states. Furthermore, on the remaining two dimensions where the sample means fell outside the first standard deviation for the college student population, the low CA subjects were the ones whose scores fell outside the normal range. The data, then did not indicate that high CA subjects' moods differed from the mood states of their peers. Rather, it suggested that low CAs experience uniquely less confusion and greater vigor than typical college students.

In summary, the data from the POMS tests revealed significant differences between high and low CAs' scores on five of the six test dimensions. In most cases, though, while the differences in the scores were statistically significant, the means for both groups fell within the range for the normal population. In the two cases where the means fell outside the first standard deviation, the low apprehensive subjects were the ones who differed from the normal population. Low apprehensive students, in other words, appeared to be characterized by less confusion and more vigor than their peers, while high CAs' mood dimensions all fell within the normal range for the college student population. Taken together, the results of the POMS test appear to indicate that the moods of high and low apprehensive subjects differed significantly from each other, but, with the exception of the findings on two dimensions for low apprehensives, they did not differ from the United States college population. The results for the low CA subjects appear to contribute a positive dimension to a general profile of their mood states, since they were less confused and more vigorous than the normal population.

Hypothesis three also attempted to determine potential reasons for communication avoidance by highly apprehensive persons. The results of the 16 PF tests, utilized to test this hypothesis, appeared to offer further explanations for differences in high and low apprehensives' behaviors. These results indicated that highly apprehensive persons, when compared to their low apprehensive counterparts, were characterized by emotional instability, restraint, submissiveness, timidity, low self-assurance, conservatism, and tension. These findings suggest that high CAs differ significantly from low CAs in their personality orientations. As was the case with the POMS scores, however, high CA subjects' 16 PF scores appeared less negative when compared with the general United States college population. As was revealed by the data reported in Table 6, high CA subjects' mean scores all fell within the normal range (first standard deviation) for the United States college student population. These results indicate that high CAs appeared disadvantaged only when compared to low CA subjects. Low CA subjects, on the other hand, differed significantly from the normal U.S. population on three of the 16 PF dimensions. Compared to normal college-age students, low CAs were significantly more dominant, radical and adventurous. Viewed from this perspective, the data indicated that low CAs' personality characteristics on the dimensions in question varied from the norm, while high CAs personality characteristics did not differ from the normal college-age population.

Most contemporary investigations of communication apprehension undertake comparisons between high and low CA subjects. After comparing mean scores for their subjects, researchers tend to interpret their results from a comparative perspective. In other words, researchers often formulate conclusions which are based upon comparisons between high and low CAs' scores. While the present research is, admittedly, of such a comparative nature, the results of the current comparison of high and low CAs' scores with population norms for their peers yield the conclusion that high CAs appear to be at a disadvantage only when compared to their low CA counterparts. When the data from the tests of hypotheses two and three were compared to the college-age population, high CAs scored within the normal range on all the POMS and 16 PF dimensions, while low CAs' scores differed from the norm on several dimensions on both scales. Hence, the results of the present investigation appear to offer encouragement for persons who suffer from high communication apprehension, since they portray a normal mood and personality profile for these individuals. The results of the significant differences in POMS and 16 PF scores, in other words, indicated that low CA subjects differed from the norm across several positive dimensions, and not that high CAs differed negatively.

Hypotheses four and five attempted to determine if significant differences existed in the gazing behaviors of high and low CAs during dyadic interactions in naturalistic settings. The findings of significant differences in high and low CAs' gazing behaviors represents the most significant contribution of this investigation. Early research by Pilkonis (1977) concluded that shy persons gazed less than their nonshy counterparts. Although this research was cited frequently by scholars of communication apprehension, Pilkonis's methodology was subject to several serious questions. First, it was noted that "shyness" and "apprehension" were not identical constructs and were measured by different scales. Because of these differences, generalizations stemming from research on "shyness" did not necessarily extend to "apprehensives." The results of the present research, however, indicated that highly apprehensive subjects clearly do engage in less gaze and mutual gaze than their low apprehensive counterparts.

Secondly, Pilkonis's research appeared to include several potentially confounding variables. The first of these involved his use of confederates who attempted to force conversation while they waited with his subjects. Specifically, these individuals gazed at their partners every ten seconds and asked scripted questions every twenty seconds. The effect of this procedure was to strongly encourage conversation, thus diminishing non-participation by his subjects. It was questioned whether Pilkonis's results could be generalized to a less intrusive setting. Because of this, the procedures utilized in the present investigation were designed to assess apprehensives' gazing behaviors in a more naturalistic environment. Both members of the dyads in this investigation were naive subjects, and no scripted questions or gazing instructions were utilized. The finding that highly apprehensive subjects engage in significantly less gaze and less mutual gaze than their low apprehensive counterparts appears to offer a stronger basis for external generalization than Pilkonis's previous research.

The third question posed about Pilkonis's methodology involved his use of cameras. Subjects in the Pilkonis investigation "waited" in a small room equipped with two permanent video cameras. Furthermore, they were told that the cameras would be utilized later in the experiment. This knowledge could clearly have produced different impacts on high and low CAs, and could have affected gazing behavior. Since the present investigation utilized a hidden camera, it effectively removed the source of this potentially confounding variable. Consequently, the finding that high CAs engaged in less gaze and mutual gaze than low CAs in the less obvious design utilized in the present investigation lends support to the notion that highly apprehensive persons gaze less than low CAs in naturalistic settings.

Taken together, the confirmation of hypotheses four and five appears to offer substantial evidence that high CAs are characterized by distinct patterns of gaze and mutual gaze avoidance across differing conditions. The discovery of patterns of gaze avoidance by high CAs, when combined with other findings of characteristic behaviors of these persons, may enhance the utility of behavioral observations for the purpose of identifying highly apprehensive persons.

The sixth hypothesis predicted that high CAs would peruse magazines in an effort to offer a socially acceptable excuse for non-conversation. The hypothesis was not supported.

The seventh and eighth hypotheses attempted to determine if apprehensives' gazing behaviors would be affected by their anticipation of speaking before a camera. The results of the univariate F test indicated that no significant differences in gaze of mutual gaze by high CA subjects were generated by their anticipation of speaking before a camera.

Taken together, the findings from the tests conducted on hypotheses seven through ten appear to lend support to the notion that patterns of gaze and mutual gaze by high and low CAs are not situational. Although high CAs reported significantly more apprehension about speaking before a camera than low CAs, their reported anxiety did not affect either their gazing or mutual gazing behaviors. These results indicate that one could infer that reduced levels of gaze and mutual gaze for high CAs may represent a pattern of behavior which is unaffected by situational influences. Further research, however, would be required to verify this inference.

Hypothesis eleven predicted that highly apprehensive subjects who anticipated speaking before a camera would demonstrate significantly greater mood disturbance than high CA subjects who did not anticipate speaking before a camera. The results of the POMS tests, which the subjects completed before they were informed that they actually did not have to deliver a speech before a camera, indicated that no significant differences in mood existed on any of the six POMS dimensions for the two groups.

The twelfth hypothesis attempted to determine if low CAs' moods would be differentially affected by anticipation of speaking before a camera. No significant differences were found for low CA subjects in the "threat" and "no threat" conditions, indicating that the anticipation of speaking before a camera did not affect the moods of low CAs differently.

The thirteenth hypothesis attempted to determine if high CA subjects who anticipated speaking before a camera would examine "boring" magazines longer than their counterparts in the "no threat" condition. The results indicated that no significant difference in magazine examination time existed for high CA "threat" and "no threat" subjects.

The final hypothesis attempted to determine if low CA subjects in the "threat" and "no threat" conditions would exhibit differential patterns of magazine examination. No significant differences were found in the magazine examination times for these two groups.

Implications for Future Research

Since the present investigation discovered patterns of gazing and mutual gazing avoidance by apprehensive subjects, it appears to offer additional and more direct support than earlier research for the notion that highly apprehensive persons attempt to avoid eye contact with other individuals. Since the present research utilized college undergraduates, however, a logical next step in research on gaze by apprehensive persons would be to use non-college student subjects.

Secondly, the present research studied interactions between unacquainted subjects, and its conclusions should only be generalized to persons who are unfamiliar with each other. One fruitful area for future research would be to investigate high CAs' gazing behaviors in the presence of friends or other familiar individuals.

A third implication of the present research concerns the negative impact of high CA. While it is presently commonplace to portray highly apprehensive individuals as socially disadvantaged or even maladapted, many of the negative conclusions about high CA (including the ones cited in the background section of the present research) have been drawn on the basis of comparisons with low CA subjects. The difficulty with such conclusions lies in their comparative nature. In other words, the fact that high CA subjects compare negatively with low CA subjects fails to address how individuals with high apprehension compare to the general population, and researchers should take care not to overgeneralize their conclusions. Hence, a third direction for future research may lie in the development of procedures which attempt to view characteristics of apprehension from a "compared to the normal population" perspective.

Conclusion

Taken together, the findings of the present research indicate that highly apprehensive persons differ from their low apprehensive counterparts in several significant ways. Behaviorally, these individuals appear to be characterized by consistent patterns of gaze and mutual gaze avoidance. The tendency for reduced gaze and mutual gaze for highly apprehensive subjects was demonstrated across differing conditions of threat and dyadic composition. The clear inference stemming from these results is that highly apprehensive persons attempt to avoid interaction by diminishing eye contact with others. Furthermore, their reduction in gaze and mutual gaze seems to be chronic rather than situational. Certainly, further research would assist in expanding and verifying these findings, but the present investigation appears to offer empirical support for McCroskey's (1976) hypothesis that highly apprehensive persons should "engage in less direct eye contact and less prolonged eye contact than people with less communication apprehension" (p. 43). Since the present research represented the first direct empirical test of McCroskey's hypothesis on apprehensive subjects, it appears to have furthered our understanding of their patterns of gazing behavior.

Methodologically, the present research appears to have represented an improvement over the design utilized by Pilkonis in his (1977) research on shy and non-shy subjects. Since the present design utilized non-intrusive cameras for recording apprehensives' behaviors, and "threat" and "no threat" conditions, its results should have better external validity than Pilkonis's earlier findings.

This investigation also provides additional verification for McCroskey's (1982) scale for the measurement of communication apprehension, the PRCA-24. The persons who were categorized as either "high" or "low" communication apprehensives by this test reflected differing behaviors, mood states, causes of anxiety, and personality characteristics, indicating that the PRCA-24 appears to be a valid measure of communication apprehension.

The finding that highly apprehensive individuals differ significantly in mood and personality characteristics from their low apprehensive counterparts may provide insight into why high apprehensives attempt to avoid communication. The results of the Profile of Mood States test appear to be especially compelling, since this investigation constituted the first recorded use of this scale on highly apprehensive subjects.

It is the sincere hope of the author of the present research that his findings in this area contribute to our understanding of persons predisposed toward apprehensive behavior.

APPENDICES

APPENDIX A

HUMAN SUBJECT'S CONSENT FORM

UNIVERSITY OF CENTRAL FLORIDA

HUMAN SUBJECTS CONSENT FORM

Project Director: Mr. J. F. Butler

Title of Project: Nonverbal Characteristics of Communication Apprehensions: A Situational Investigation

Expected Duration of Participation: 30 minutes

I agree to participate as a subject in this study. I understand that the project will include the following experimental procedures:

> I will be ushered into a small waiting room, and be called out periodically to complete three non-intrusive, non-threatening questionnaires.

I understand that the possible discomforts or risks may be as follows:

> None

I further understand that I have the right to withdraw from the study at any time without prejudice.

____
Participant

____
Parent (if under 18)

APPENDIX B

PRCA TEST

NAME ____________________

PRCA

INSTRUCTOR ____________________

DIRECTIONS: This instrument is composed of 24 statements concerning feelings about communication with other people. Please indicate the degree to which each statement applies to you by marking whether you (1) strongly agree, (2) agree, (3) are undecided, (4) disagree, or (5) strongly disagree. Please just record your first impression.

____ 1. I dislike participating in group discussions.

____ 2. Generally, I am comfortable while participating in a group discussion.

____ 3. I am tense and nervous while participating in group discussions.

____ 4. I like to get involved in group discussions.

____ 5. Engaging in a group discussion with new people makes me tense and nervous.

____ 6. I am calm and relaxed while participating in group discussions.

____ 7. Generally, I am nervous when I have to participate in group discussions.

____ 8. Usually I am calm and relaxed while participating in meetings.

____ 9. I am very calm and relaxed when I am called upon to express an opinion at a meeting.

____ 10. I am afraid to express myself at meetings.

____ 11. Communicating at meetings usually makes me uncomfortable.

____ 12. I am very relaxed when answering questions at a meeting.

____ 13. While participating in a conversation with a new acquaintance, I feel very nervous.

____ 14. I have no fear of speaking up in conversations.

____ 15. Ordinarily I am very tense and nervous in conversations.

____ 16. Ordinarily I am very calm and relaxed in conversations.

____ 17. While conversing with a new acquaintance , I feel very relaxed.

____ 18. I'm afraid to speak up in conversations.

____ 19. I have no fear of giving a speech.

____ 20. Certain parts of my body feel very tense and rigid while giving a speech.

____ 21. I feel relaxed while giving a speech.

____ 22. My thoughts become confused and jumbled when I am giving a speech.

____ 23. I face the prospect of giving a speech with confidence.

____ 24. While giving a speech, I get so nervous, I forgot facts I really know.

____ 25. I find the prospect of speaking in front of a camera threatening.

APPENDIX C

DEBRIEFING STATEMENT

DEBRIEFING STATEMENT

Thanks for helping us with this research. As you may have guessed, you were observed through the one-way mirror in the "group" room. In fact, you were recorded on video tape. The reason for this is that we are attempting to correlate certain nonverbal behaviors such as patterns of eye contact and length of gaze duration with scores on the "P.R.C.A. - the 24 item questionnaire you completed on the first day of class. Hopefully, this research will help us understand more about the nonverbal behaviors of apprehensive communicators.

I would like to make one thing very clear. It was necessary for us not to disclose that you were being videotaped until now, but I would like to stress that it is your right to tell us to erase that tape right now if you don't want us to use it. We hope that you don't choose that option, but we want to stress that it is your right to tell us to erase it. In any event, you will receive full credit for participating in this experiment. Is it OK for us to use your tape? ______ Do you have any other questions?

Thanks again!
Jeff Butler

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BIOGRAPHICAL SKETCH

John Frederick Butler, Jr., was born in Akron, Ohio, on June 14, 1944. In 1955 he moved with his family to Winter Park, Florida, where he completed his secondary education at Winter Park High School in 1963. From 1964-65, Butler attended Orlando Junior College. In 1965 he transferred to Florida State University where he received his B.A. in speech in 1967. After teaching in the Orange County, Florida, public school system for four years, Butler enrolled at Florida Technological University where he was awarded his M.A. in communication in 1972. In 1973 he started commuting to the University of Florida in pursuit of his Ph.D. Eleven years (and many trips to Gainesville) later, Butler was awarded a Ph.D. in speech. He presently teaches at the University of Central Florida in Orlando.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Anthony Clark

Anthony Clark, Chairman
Associate Professor of Speech

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Thomas B. Abbott

Thomas B. Abbott
Professor of Speech

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This dissertation was submitted to the Graduate Faculty of the Department of Speech in the College of Liberal Arts and Sciences and to the Graduate School, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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Dean for Graduate Studies
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